

Form PTO-1449

Applicant: Mahendra S. Rao and Tahmina Mujtaba
Serial No.: 09/073,881
Filing Date: May 6, 1998
For: COMMON NEURAL PROGENITOR FOR THE CNS AND PNS



Sheet 1 of 8

Att'y Docket No. T4903.CIP

Group: ~~1643~~
1644.

INFORMATION DISCLOSURE CITATIONS MADE BY APPLICANT

U.S. Patent Documents

| <u>Examiner Initial*</u> | <u>Patent Number</u> | <u>Issue Date</u> | <u>Name</u> | <u>Class</u> | <u>Sub Class</u> | <u>Filing Date</u> |
|------------------------------|--------------------------|-----------------------|-----------------|--------------|----------------------|------------------------|
| <u>RA</u> A1 | 5,411,883 | 5/95 | Boss et al. | 435 | 240.2 | |
| <u>J</u> A2 | 5,753,506 | 5/98 | Johe et al. | 435 | 377 | |
| <u>J</u> A3 | 5,589,376 | 12/31/96 | Anderson et al. | 435 | 240.2 | |

Foreign Patent Documents

N O N E

Other Documents

(including author (if listed), title, relevant pages, date of publication including at least month and year).

Examiner

Initial*

RA A4

Cattaneo et al., *Nature*, 347:762-765 (1990)

Examiner:

Date Considered:

6/5/00

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant: Mahendra S. Rao and Tahmina Mujtaba
Serial No.: 09/073,881
Filing Date: May 6, 1998
For: COMMON NEURAL PROGENITOR FOR THE CNS AND PNS

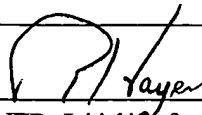
Att'y Docket No. T4903.CIP

Group: ~~1643~~

1644

- _____ A5 F. H. Gage et al., *Isolation, Characterization and Use of Stem Cells from the CNS*, 18 Ann. Rev. Neurosci. 159-92 (1995)
- _____ A6 M. Marvin et al., *Multipotential Stem Cells in the Vertebrate CNS*, 3 Semin. Cell. Biol. 401-11 (1992)
- _____ A7 A. A. Davis et al., *A Self-Renewing Multipotential Stem cell in Embryonic Rat Cerebral Cortex*, 362 Nature 363-72 (1994)
- _____ A8 A. G.ritti et al., *Multipotential Stem Cells from the Adult Mouse Brain Proliferate and Self-Renew in Response to Basic Fibroblast Growth Factor*, 16 J. Neurosci. 1091-1100 (1996)
- _____ A9 B. A. Reynolds et al., *A Multipotent EGF-Responsive Striatal Embryonic Progenitor Cell Produces Neurons and Astrocytes*, 12 J. Neurosci. 4565-74 (1992)
- _____ A10 B. A. Reynolds et al., *Clonal and Population Analyses Demonstrate that an EGF-Responsive Mammalian Embryonic CNS Precursor is a Stem Cell*, 175 Developmental Biol. 1-13 (1996)
- _____ A11 B. P. Williams et al., *The Generation of Neurons and Oligodendrocytes from a Common Precursor Cell*, 7 Neuron 658-93 (1991)
- _____ A12 T. J. Kilpatrick et al., *Cloned Multipotential Precursors from the Mouse Cerebrum Require FGF-2, Whereas Glial Restricted Precursors are Stimulated with Either EGF-2 or EGF*, 15 J. Neurosci. 3653-61 (1995)
- _____ A13 J. Price et al., *Lineage Analysis in the vertebrate Nervous System by Retrovirus-Mediated Gene Transfer*, 84 Developmental Biol. 156-60 (1987)
- _____ A14 B. Williams, *Precursor Cell Types in the Germinal Zone of the Cerebral Cortex*, 17 BioEssays 391-93 (1995)

Examiner:



Date Considered:

6/5/00

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant: Mahendra S. Rao and Tahmina Mujtaba
Serial No.: 09/073,881
Filing Date: May 6, 1998
For: COMMON NEURAL PROGENITOR FOR THE CNS AND PNS

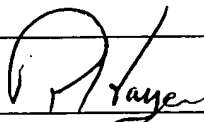
Att'y Docket No. T4903.CIP

Group: 1643

1644

- _____ A15 V. Hamburger, *The Mitotic Patterns in the Spinal Cord of the Chick Embryo and Their Relation to the Histogenic Process*, 88J. Comp. Neurol. 221-84 (1948)
- _____ A16 H. O. Nomes et al., *Temporal Pattern of Neurogenesis in the Spinal Cord of Rat. I. An Autoradiographic Study -- Time and Sites of Origin and Migration and Settling Patterns of Neuroblasts*, 73 Brain Res. 121-38 (1974)
- _____ A17 J. Altman et al., *The Development of the Rat Spinal Cord*, 85 Adv. Anat. Embryol. Cell Biol. 32-46 (1984)
- _____ A18 P. E. Phelps et al., *Generation Patterns of Four Groups of Cholinergic Neurons in Rat Cervical Spinal Cord: A Combined Tritiated Thymidine Autoradiographic and Choline Acetyltransferase Immunocytochemical Study*, 273 J. Comp. Neurol. 459-72 (1988)
- _____ A19 P. E. Phelps et al., *Embryonic Development of Four Different Subsets of Cholinergic Neurons in Rat Cervical Spinal Cord*, 291 J. Comp. Neurol. 9-26 (1990)
- _____ A20 E.W. Chen et al., *Early Stages in the Development of Spinal Motor Neurons*, 320 J. Comp. Neurol. 291-303 (1992)
- _____ A21 J. Dodd et al., *Spatial Regulation of Axonal Glycoprotein Expression on Subsets of Embryonic Spinal Neurons*, 1 Neuron 105-16 (1988)
- _____ A22 J. Erickson et al., *Early Stages of Motor Neuron Differentiation Revealed by Expression of Homeobox Gene Islet-1*, 256 Science 1555-59 (1992)
- _____ A23 M. Hirano et al., *Gliogenesis in the Rat Spinal Cord: Evidence for Origin of Astocytes and Oligodendrocytes from Radial Precursors*, 21 J. Neurosci. Res. 155-67 (1988)
- _____ A24 B. C. Warf et al., *Evidence for the Ventral Origin of Oligodendrocyte Precursors in the Rat Spinal Cord*, 11 J. Neurosci. 2477-88 (1991)

Examiner:



Date Considered:

6/5/00

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

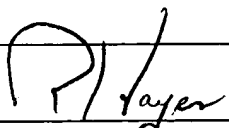
Applicant: Mahendra S. Rao and Tahmina Mujtaba
Serial No.: 09/073,881
Filing Date: May 6, 1998
For: COMMON NEURAL PROGENITOR FOR THE CNS AND PNS

Att'y Docket No. T4903.CIP

Group: ~~1643~~
1644

- _____ A25 N. P. Pringle et al., *A Singularity of PDGF Alpha-Receptor Expression in the Dorsoventral Axis of the Neural Tube May Define the Origin of the Oligodendrocyte Lineage*, 117 Development 525-33 (1993)
- _____ A26 D. J. Anderson, *The Neural Crest Cell Lineage Problem: Neuropoiesis?*, 3 Neuron 1-12 (1989)
- _____ A27 J. Ray et al., *Spinal Cord Neuroblasts Proliferate in Response to basic Fibroblast Growth Factor*, 14 J. Neurosci. 3548-64 (1994)
- _____ A28 M. Bronner-Fraser et al., *Cell Lineage Analysis Slows Multipotency of Some Avian Neural Crest Cells*, 355 Nature 161-64 (1988)
- _____ A29 M. Murphy et al., *Fibroblast Growth Factor Stimulates the Proliferation and Differentiation of Neural Precursor Cell In Vitro*, 25 J. Neurosci. Res. 463-75 (1990)
- _____ A30 J. Drago et al., *Fibroblast Growth Factor-Mediated Proliferation of Central Nervous System Precursors Depends on Endogenous Production of Insulin-like Growth Factor I*, 88 Proc. Nat'l. Acad. Sci. USA 2199-2203 (1991)
- _____ A31 T. J. Kilpatrick et al., *Cloning and Growth of Multipotential Neural Precursors: Requirements for Proliferation and Differentiation*, 10 Neuron 255-65 (1993)
- _____ A32 P. G. Bannerman et al., *Protein Growth Factor Requirements of Rat Neural Crest Cells*, 36 J. Neurosci. Res. 46-57 (1993)
- _____ A33 D. L. Stemple et al., *Isolation of a Stem Cell for Neurons and Glia from the Mammalian Neural Crest*, 71 Cell 973-85 (1992)
- _____ A34 L. Sommers et al., *The Cellular Function of MASH 1 in Autonomic Neurogenesis*, 15 Neuron 1245-58 (1995)

Examiner:



Date Considered:

6/5/00

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

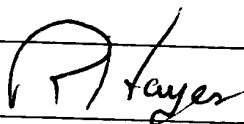
Applicant: Mahendra S. Rao and Tahmina Mujtaba
Serial No.: 09/073,881
Filing Date: May 6, 1998
For: COMMON NEURAL PROGENITOR FOR THE CNS AND PNS

Att'y Docket No. T4903.CIP

Group: 1643
1644

- _____ A35 U. Lendahl et al., *CNS Stem Cells Express a New Class of Intermediate Filament Protein*, 60 Cell 585-95 (1990)
- _____ A36 W. Camu et al., *Purification of Embryonic Rat Motoneurons by Panning on a Monoclonal Antibody to the Low-affinity NGF Receptor*, 44 J. Neurosci. Meth. 59-70 (1992)
- _____ A37 M. Raff, *Glial Cell Diversification in the Rat Optic Nerve*, 243 Science 1450-55 (1989)
- _____ A38 L. E. Lillien et al., *Analysis of the Cell-Cell Interactions that Control Type-2 Astrocyte Development In Vitro*, 4 Neuron 525-34 (1990)
- _____ A39 A. L. Vescovi et al., *bFGF Regulates the Proliferative Fate of Unipotent (Neuronal) and Bipotent (Neuronal/Astroglial) EGF-Generated CNS Progenitor Cells*, 11 Neuron 951-66 (1993)
- _____ A40 S. Temple et al., *Isolated Rat Cortical Progenitor Cells are Maintained in Division In Vitro by Membrane-Associated Factors*, 120 Development 999-1008 (1994)
- _____ A41 F. Aloisi et al., *Developmental Appearance, Antigenic Profile, and Proliferation of Glial Cells of the Human Embryonic Spinal Cord: An Immunocytochemical Study Using Dissociated Cultured Cells*, 5 Glia 181 (1992)
- _____ A42 R. S. Cameron et al., *Glial Cell Lineage in Cerebral Cortex: A Review and Synthesis*, 4 Glia 124-37 (1991)
- _____ A43 C. L. Chan et al., *Oligodendrocyte-type 2 Astrocyte (O-2A) Progenitor Cells from Neonatal and Adult Rat Optic Nerve Differ in Their Responsiveness to Platelet-Derived Growth Factor*, 55 Brain Res. Dev. Brain Res. 275-82 (1990)
- _____ A44 G. A. Elder et al., *Characterization of Glial Subpopulations in Cultures of the Ovine Central Nervous System*, 1 Glia 317-27 (1988)

Examiner:



Date Considered:

6/5/00

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

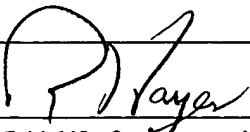
Applicant: Mahendra S. Rao and Tahmina Mujtaba
Serial No.: 09/073,881
Filing Date: May 6, 1998
For: COMMON NEURAL PROGENITOR FOR THE CNS AND PNS

Att'y Docket No. T4903.CIP

Group: 1643
1644

- _____ A45 J. Fok-Seang et al., *Distribution and Differentiation of A2B5 + Glial Precursors in the Developing Rat Spinal Cord*, 37 J. Neurosci. Res. 219-35 (1994)
- _____ A46 B. P. Fulton et al., *Visualization of O-2A Progenitor Cells in Developing an Adult Rat Optic Nerve by Quisqualate-Stimulated Cobalt Uptake*, 12 J. Neurosci. 4816-33 (1992)
- _____ A47 D. S. Galileo et al., *Neurons and Glia Arise from a Common Progenitor in Chicken Optic Tectum: Demonstration with Two Retroviruses and Cell Type-Specific Antibodies*, 87 Proc. Nat'l Acad. Sci. USA 458-62 (1990)
- _____ A48 A. L. Gard et al., *Oligodendroblasts Distinguished from O-2A Glial Progenitors by Surface Phenotype (O4 + GalC-) and Response to Cytokines Using Signal Transducer LIFR β* , 167 Dev. Biol. 596-608 (1995)
- _____ A49 R. Hardy et al., *Proliferation and Differentiation Potential of Rat Forebrain Oligodendroglial Progenitors Both In Vitro and In Vivo*, 111 Development 1061-80 (1991)
- _____ A50 R. J. Hardy et al., *Oligodendrocyte Progenitors are Generated Throughout the Embryonic Mouse Brain, But Differentiate in Restricted Foci*, 122 Development 2059-69 (1996)
- _____ A51 P. E. Knapp, *Studies of Glial Lineage and Proliferation In vitro Using an Early Marker for Committed Oligodendrocytes*, 30 J. Neurosci. Res. 336-45 (1991)
- _____ A52 M. B. Luskin et al., *Neurons, Astrocytes, and Oligodendrocytes of the Rat Cerebral Cortex Originate from Separate Progenitor Cells: An Ultrastructural Analysis of Clonally Related Cells*, 13 J. Neurosci. 1730-50 (1993)
- _____ A53 R. H. Miller, *Oligodendrocyte Origins*, 19 TINS 92-96 (1996)
- _____ A54 K. Ono et al., *Early Development and Dispersal of Oligodendrocyte Precursors in the Embryonic Chick Spinal Cord*, 121 Development 1743-54 (1995)

Examiner:



Date Considered:

6/5/00

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant: Mahendra S. Rao and Tahmina Mujtaba
Serial No.: 09/073,881
Filing Date: May 6, 1998
For: COMMON NEURAL PROGENITOR FOR THE CNS AND PNS

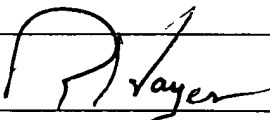
Att'y Docket No. T4903.CIP

Group: 1643

1644

- _____ A55 M. C. Raff et al., *A Glial Progenitor Cell That Develops In Vitro into an Astrocyte or an Oligodendrocyte Depending on Culture Medium*, 303 Nature 390-96 (1983)
- _____ A56 M. J. Rivkin et al., *Oligodendroglial Development in Human Fetal Cerebrum*, 38 Ann. Neurol. 92-101 (1995)
- _____ A57 G. S. Eisenbarth et al., *Monoclonal Antibody to Plasma Membrane Antigen of Neurons*, 76 Proc. Nat'l Acad. Sci. USA 4913-17 (1979)
- _____ A58 E. E. Geisert et al., *The Neuronal Response to Injury as Visualized by Immunostaining of Class β -tubulin in the Rat*, 102 Neurosci. Lett. 137-41 (1989)
- _____ A59 I. Sommer et al., *Monoclonal Antibodies (01-04) to Oligodendrocyte Cell Surfaces: An Immunocytological Study in the Central Nervous System*, 83 Dev. Biol. 311-27 (1981)
- _____ A60 P. A. Trimmer et al., *Combination of In Situ Hybridization and Immunocytochemistry to Detect Messenger RNAs in Identified CNS Neurons and Glia in Tissue Culture*, 39 J. Histochem. Cytochem. 891-8 (1991)
- _____ A61 L. J. Wysocki et al., *"Panning" for Lymphocytes: A Method for Cell Selection*, 75 Proc. Nat'l Acad. Sci. 2844-48 (1978)
- _____ A62 M. Mayer et al., *Ciliary Neurotrophic Factor and Leukemia Inhibitory Factor Promote the Generation, Maturation, and Survival of Oligodendrocytes*, 120 Development 142-53 (1994)
- _____ A63 J. E. Bottenstein et al., *Growth of Rat Neuroblastoma Cell Line in Serum-Free Supplemented Medium*, 76 Proc. Nat'l Acad. Sci. USA 514-17 (1979)
- _____ A64 L. E. Lillien et al., *Differentiation Signals in the CNS: Type-2 Astrocyte Development In Vitro as a Model System*, 5 Neuron 5896-6273 (1990)

Examiner:



Date Considered:

6/5/00

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant: Mahendra S. Rao and Tahmina Mujtaba
Serial No.: 09/073,881
Filing Date: May 6, 1998
For: COMMON NEURAL PROGENITOR FOR THE CNS AND PNS

Att'y Docket No. T4903.CIP
Group: 1643

References Cited by Applicants

While the filing of Information Disclosure Statements is voluntary, the procedure is governed by the guidelines of Section 609 of the Manual of Patent Examining Procedure and 37 C.F.R. §§ 1.97 and 1.98. To be considered a proper Information Disclosure Statement, Form PTO-1449 shall be accompanied by a copy of each listed patent or publication or other item of information and a translation of the pertinent portions of foreign documents (if an existing translation is readily available to the applicant), an explanation of relevance of each reference not in the English language, and should be submitted in a timely manner as set out in MPEP Sec. 609.

Examiners will consider all citations submitted in conformance with 37 C.F.R. § 1.98 and MPEP Sec. 609 and place their initials adjacent the citations in the spaces provided on this form. Examiners will also initial citations not in conformance with the guidelines which may have been considered. A reference may be considered by the Examiner for any reason whether or not the citation is in full conformance with the guidelines. A line will be drawn through a citation if it is not in conformance with the guidelines AND has not been considered. A copy of the submitted form, as reviewed by the Examiner, will be returned to the applicant with the next communication. The original of the form will be entered into the application file.

Each citation initialed by the Examiner will be printed on the issued patent in the same manner as references cited by the Examiner on Form PTO-892.

The reference designations "A1," "A2," etc. (referring to Applicant's reference 1, Applicant's reference 2, etc.) will be used by the Examiner in the same manner as Examiner's reference designations "A," "B," "C," etc. on Office Action Form PTO-1142.

C:\MKK\T4903CIP.1449.fm

Examiner:

Date Considered:

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
